F. C. HALL.

SILO.

APPLICATION FILED OCT. 12, 1916.

1,240,135.

Patented Sept. 11, 1917.

2 SHEETS—SHEET 1.

FIG. 1.

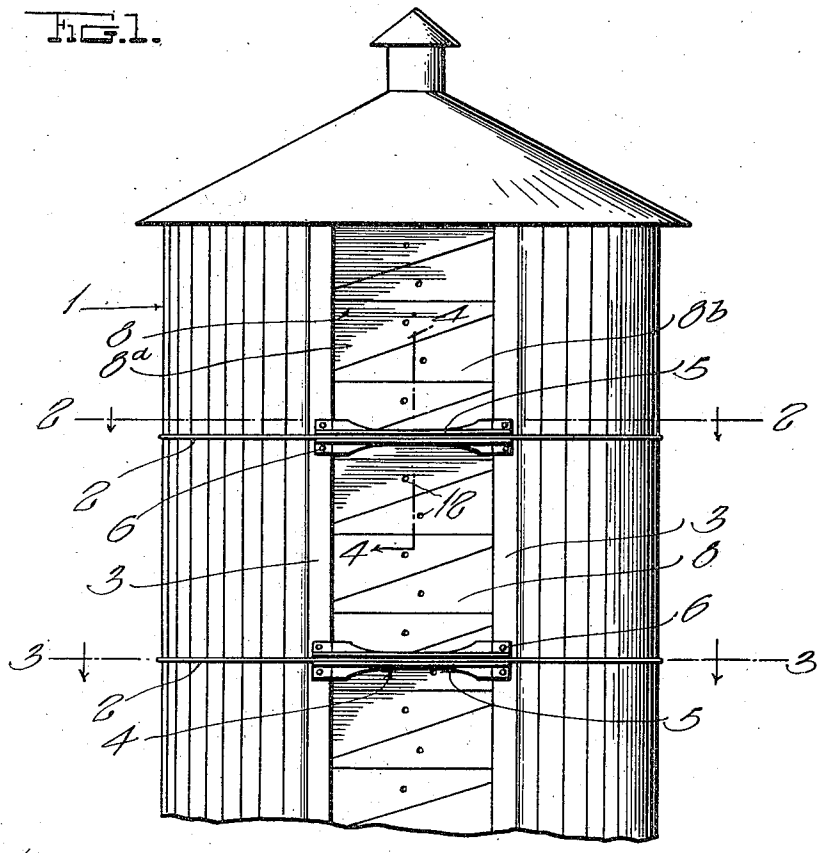


FIG. 2.

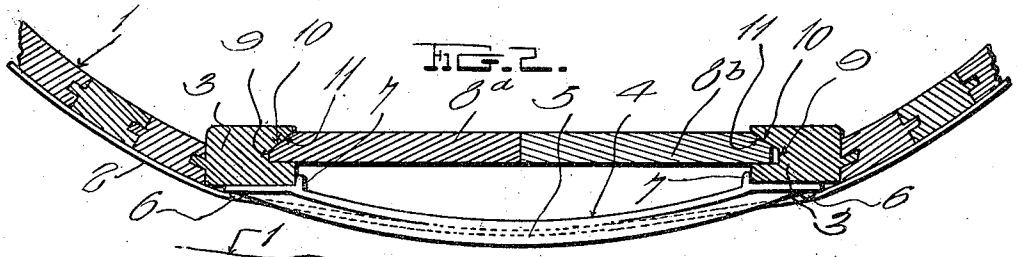
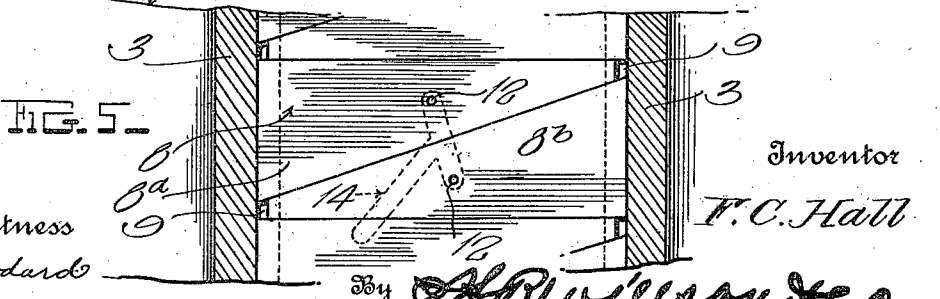


FIG. 5.



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2 SHEETS—SHEET 2.

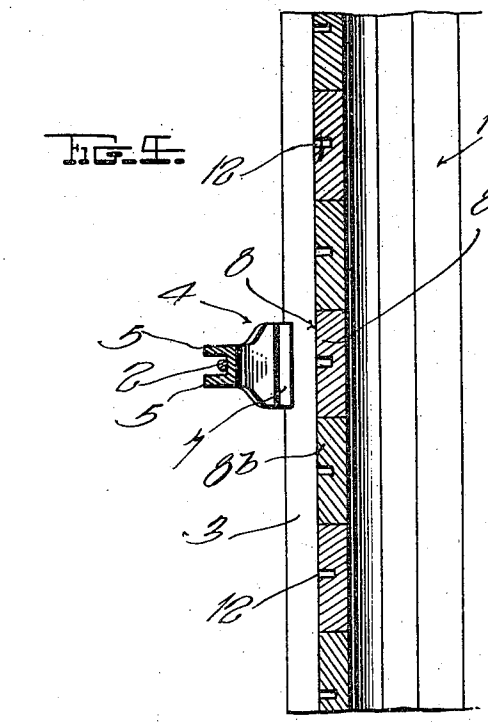


FIG. 5.

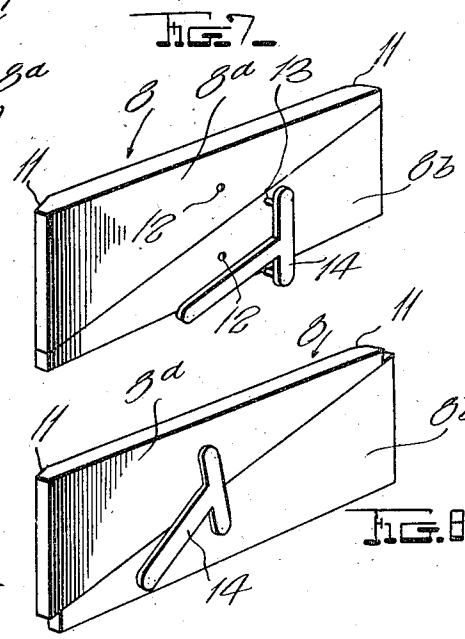


FIG. 7.

FIG. 8.

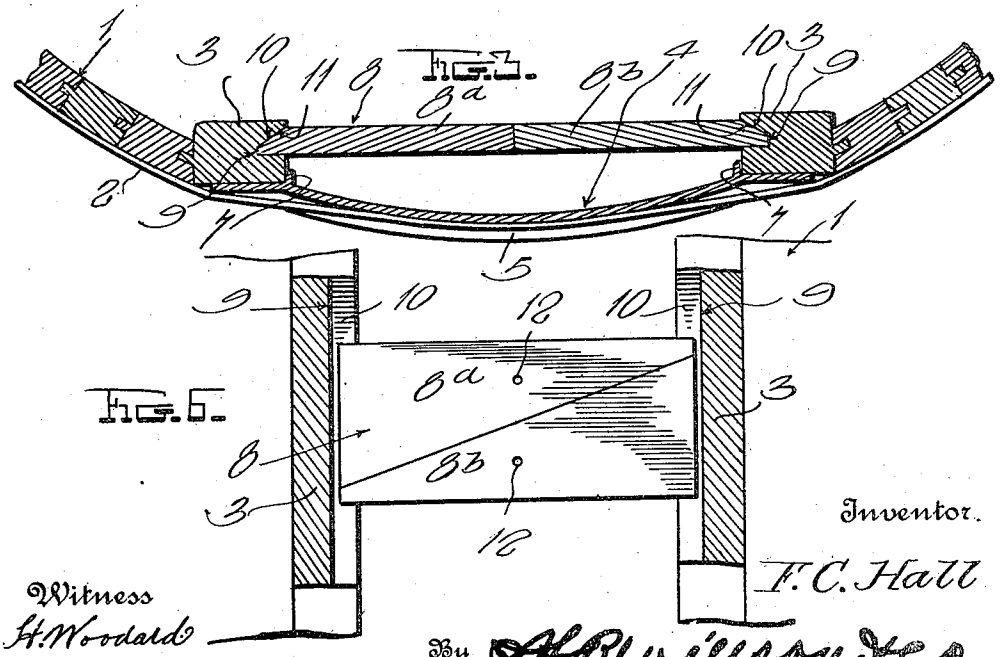


FIG. 4.

FIG. 6.

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UNITED STATES PATENT OFFICE.

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SILO.

1,240,135. Specification of Letters Patent. Patented Sept. 11, 1917.

Application filed October 12, 1916. Serial No. 125,249.

To all whom it may concern:

Be it known that I, FRANK C. HALL, a citizen of the United States, residing at Hartford, in the county of Washington and State of New York, have invented certain new and useful Improvements in Silos; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates broadly to improvements in silos, and more particularly to the doorways and doors therefor.

The principal object of the invention is to provide a new and improved door construction for silos and other buildings of ordinary construction.

A secondary object is to provide a brace for properly positioning and holding the door-jambs of the doorway.

With these and other objects in view, the invention resides in the novel features of construction, combination and arrangement of parts which will be more particularly described and claimed and shown in the drawing wherein:

Figure 1 is a side elevation of a portion of a silo showing the doorway and doors thereof constructed in accordance with my invention;

Figs. 2 and 3 are horizontal sections taken respectively on the lines 2—2 and 3—3 of Fig. 1;

Fig. 4 is a vertical section on the line 4—4 of Fig. 1;

Fig. 5 is a detail side elevation partly in section, showing the position of the sections of one of the doors after it has been locked in its jambs;

Fig. 6 is a detail vertical section showing the position of the parts of one door member before the same are shifted into their locked position;

Fig. 7 is a detail perspective view of one of the door sections before the parts are shifted, and the wrench used for moving the same; and

Fig. 8 is a similar view of the parts of a door after they are shifted.

In the accompanying drawing wherein similar reference characters designate like parts throughout the several views, the numeral 1 denotes a portion of the body of a silo of ordinary construction, it being shown as formed of a plurality of vertically disposed staves joined to each other by a tongue and groove formation. These staves are ordinarily arranged in circular design and are held in position by means of hoops or bands 2 provided with any preferred tightening means and disposed at predetermined points around the structure. The staves are spaced apart in order to form a vertically extended door opening on each side of which and connected to the adjacent staves are the door jambs 3, the same extending from the top to the bottom of the silo, the doorway being closed by suitable doors which will later be more particularly described.

The door jambs 3 are held in proper relation to each other and the correct distance apart by means of horizontal braces 4 in the form of plates having their outer surface concentric with the axis of the structure and of somewhat greater radius to project outwardly therefrom a suitable distance. The number of these braces corresponds to the number of the bands 2, the latter being disposed between a pair of longitudinal integrally formed ribs 5 on the outer face of the plates. These ribs extend the full length of the braces and are spaced apart only sufficient distance to receive the hoops or bands and form seats therefor. The outer ends of the plates forming the braces 4 are somewhat larger than the intermediate portions in order to provide attaching flanges having apertures for the reception of bolts 6 or other suitable fasteners. In order to aid the bolts 6 in holding the door jambs 3 properly spaced, integrally formed transversely extending ribs 7 are provided on the inner face of the plates, the distance between these ribs being the normal distance between the jambs. This arrangement provides a very simple yet strong silo construction. It is also obvious that the same may be readily applied to other forms of buildings.

In order to accommodate the doors 8, the inner or adjacent faces of the door jambs 3 are longitudinally grooved as shown at 9, the rear wall 10 of said grooves being inclined from the bottoms thereof rearwardly, while the front walls are substantially parallel to the outer faces of the jambs. The ends of the doors 8 have their rear corners beveled off as shown at 11 in order that they may be wedged into frictional engagement with the inclined walls 10 of the

grooves and thereby form an air and water tight joint.

The doors which are disposed in the vertical grooves 9 are each preferably formed of two parts or sections 8^a and 8^b, the section 8^a having its bottom edge inclined downwardly from the top to the bottom thereof, while the section 8^b has its top edge inclined in the same direction. The inclination of the inner adjacent edges of the two parts of each door are the same, while the top and bottom edges thereof are parallel. As each door formed of the two sections 8^a and 8^b is disposed between the jambs 3, the sections thereof are moved laterally in opposite directions on their adjacent inclined edges in order to dispose or wedge the wide ends of each section into engagement with the inclined walls of the grooves 9.

In order to more effectively shift the sections of the doors to lock the same against the jambs 3, each is provided with a preferably circular socket 12 adjacent its inclined edge in which the studs 13 of an ordinary spanner wrench 14 are disposed. It is obvious that when the handle of this wrench is forced in the proper direction, the wide ends of the sections 8^a and 8^b will tightly engage the walls 10. After the first door has had its sections adjusted, the wrench may be removed therefrom and applied to the parts of the next door above. By providing the inclined edges of the door sections, the latter may be shifted by an ordinary spanner wrench, the studs thereof being disposed in circular seats.

Various changes may be made in the form and proportions of this improved door structure without departing from or sacrificing any of the principles of the invention.

I claim:

1. In a building having a vertically extending opening forming a doorway, a series of two-part doors disposed successively one upon the top of the other within said doorway, the end edges of said door sections having wedging engagement with the jambs of the doorway and the contacting longitudinal edges of each pair of door sections being inclined at an appreciable angle to the horizontal in order to increase the friction of the sliding movement between the door sections, and means to permit said sections to be moved longitudinally in opposite directions.

2. In a building having a vertically extended opening forming a doorway, a door-jamb disposed on each side of said opening, the adjacent face of each jamb being provided with a vertical groove, one wall thereof being inclined, a series of two-part doors disposed successively one upon the top of the other within said door opening, the adjacent edges of the sections of each door being inclined from one end to the other, and means to permit the sections of each door to be engaged and moved laterally in opposite directions on their inclined edges to frictionally engage their end edges with the inclined walls of the grooves.

3. The combination with a building having a vertically extended opening forming a doorway, a door-jamb disposed on each side of said opening, the adjacent face of each jamb being provided with a vertical groove, one wall thereof being inclined, and a series of two-part doors disposed successively one upon the top of the other within said doorway, the adjacent edges of the sections of each door being inclined from one end to the other, each section also having a circular socket formed therein adjacent its inclined edge; of means disposed in engagement with the sockets of the sections of each door to move said sections laterally in opposite directions on their inclined edges to engage their end edges with the inclined walls of the grooves.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK C. HALL.

Witnesses:
JOHN B. NORTON,
WILLIAM N. NORTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."